



Equal Opportunity Employer

P.O. Box 51450  
Idaho Falls, Idaho 83405  
(208) 523-6600  
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DE/AFS/SF

April 20, 2007

Mr. Jonathan Pettit  
Air Quality Permitting Analyst  
State of Idaho Department of Environmental Quality  
1410 North Hilton  
Boise, Idaho 83706

RECEIVED

APR 23 2007

DEPARTMENT OF ENVIRONMENTAL QUALITY  
CIVIL AGENCY

Re: PTCs for Idaho Falls Plant and Teton Plant

Dear Mr. Pettit:

Attached please find the new copies of the Permits to Construct for the following Plants:

1. Idaho Falls Plant – 019-00031
2. Teton Plant – P-060523

After talking Bill Rogers on the phone on Thursday, April 19, 2007, I am sending the updated information to you for your review and submittal. Please consider this as my application for both plants. If you have any questions or concerns please call me and I will be glad to assist you.

Thank you for your patience and assistance with this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Clarence H Davis', is written over a horizontal line.

Clarence H Davis  
Permits & Environmental Administrator  
H K Contractors, Inc.  
P.O. Box 51450  
Idaho Falls, Idaho 83405  
(208) 523-6600

**PERMIT TO CONSTRUCT (PTC) APPLICATION  
For Hot-Mix Asphalt Plants**

FORM AQ-F-P007

Please be sure to read the instructions on page one prior to completing this application form.

**GENERAL INFORMATION**

RECEIVED

Company Name:	H K Contractors, Inc.			APR 23 2007
Mailing Address:	P.O. Box 51450			
City:	Idaho Falls	State:	Idaho	
Zip Code:	83405	County:	Bonneville County	
General Nature of Business & Products:	General Contractor - Underground Utility, Gravel & Asphalt & Etc.			

Contact Name, Title:	Larry Ritter / Asphalt General Superintendent		
Phone:	208-523-6600	Cell:	208-317-8627
Email:	larryritter@hkcontractors.com		

Owner or Responsible Official Name, Title:	Wade Foster / Owner	Clarence H Davis / Permits
Phone:	208-523-6600	208-523-6600
Email:	wadefoster@hkcontractors.com	clarencedavis@hkcontractors.com

Proposed Initial Plant Location:	1523 East 49 <sup>th</sup> North		
Nearest City:	Idaho Falls	Estimated Startup Date:	4/1/2007
County:	Bonneville		

Reason for Application:	<input type="checkbox"/> Permit to construct a new source <input type="checkbox"/> Permit to operate an existing unpermitted source <input checked="" type="checkbox"/> Permit to modify/revise an existing permitted source (identify the permit below)		
	Permit No.: <u>019-00031</u>		
	Issue Date: <u>June 28, 1999</u>		
	Facility ID: <u>135 Hot Plant</u>		
<input checked="" type="checkbox"/> Check here to indicate you would like to review a draft permit prior to final issuance.			
<b>Comments:</b> Changing Burner Fuel Type and Changing from a 360 Burner to a 520 Burner			

# PERMIT TO CONSTRUCT (PTC) APPLICATION For Hot-Mix Asphalt Plants

FORM AQ-F-P007

## HOT-MIX ASPHALT PLANT INFORMATION

Manufacturer:	Barber Green	Model:	DM-60
Manufacture Date:	1968	Type HMA Plant:	<input checked="" type="checkbox"/> Drum Mix <input type="checkbox"/> Batch Mix
Maximum Hourly Asphalt Production:	400 (tons/hour)		
Requested Annual Asphalt Production:	3,504,000 (tons/year)		
Burner Fuel Type:	Used Oil, Propane, #2 Fuel Oil, Nat Gas (natural gas, #2 fuel oil, etc)		
Maximum Burner Fuel Usage Rate:	500 <input type="checkbox"/> scf/hour or <input checked="" type="checkbox"/> gallons/hour		
Type Air Pollution Control Device:	Scrubber (baghouse, scrubber, etc.)		
Control Device Manufacturer:	Barber Green	Model:	CV-70
Stack Parameters:	Stack Height from Ground (ft): <u>28</u> Stack Exhaust Flow Rate (acfm): <u>45,000</u> Stack Inside Diameter (ft): <u>8.0'</u> Stack Exhaust Gas Temperature (°F): <u>135</u>		

## ASPHALT TANK HEATER

Fuel Type:	Natural gas (natural gas, #2 fuel oil, etc)		
Maximum Fuel Usage Rate:	15 (units/hour) 50,400 (units/year) <input type="checkbox"/> gallons <input checked="" type="checkbox"/> ft <sup>3</sup> <input type="checkbox"/> other:		
Type Air Pollution Control Device:	none <input type="checkbox"/> MMBtu <input type="checkbox"/> HP		
Stack Parameters:	Stack Height from Ground (ft): <u>9</u> Stack Exhaust Flow Rate (acfm): <u>?</u> Stack Inside Diameter (ft): <u>0.388</u> Stack Exhaust Gas Temperature (°F): <u>300</u>		

Is this an NSPS-affected facility? ☐ Yes ☒ No

To determine if the HMA facility is a New Source Performance Standards (NSPS)-affected facility, consider the following:

Were any of the following constructed or modified after June 11, 1973, such that the equipment becomes an affected facility as defined in 40 Code of Federal Regulations, Part 60, Section 90 (40 CFR 60.90) *Standards of Performance for Hot-Mix Asphalt Facilities*:

- Dryers
- Systems for screening, handling, storing, and weighing of hot aggregate
- Systems for loading, transferring, and storing of mineral filler
- Systems for mixing hot-mix asphalt
- Leading, transfer, and storage systems associated with emission control systems

Modification is defined in 40 CFR 60.14. The Code of Federal Regulations can be accessed from the website <http://www.gpoaccess.gov/cfr/>.

Has a performance test been conducted in accordance with 40 CFR 60.93 that demonstrates particulate matter emissions are less than or equal to 0.04 gr/dscf (grains per dry standard cubic foot) at the HMA stack?

☒ Yes ☐ No

If Yes, state the date the test was conducted: 8/8/2000.

Provide a copy of the performance test results with this application if you want DEQ to consider it in determining the frequency of performance testing requirements for your hot-mix asphalt plant.

# **PERMIT TO CONSTRUCT (PTC) APPLICATION For Hot-Mix Asphalt Plants**

FORM AQ-F-P007

## **ELECTRICAL GENERATOR SET INFORMATION (IF APPLICABLE)**

Manufacturer:	N/A	Model:	N/A
Maximum Rated Capacity:	N/A <input type="checkbox"/> Hp <input type="checkbox"/> kW		
Fuel Type:	<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Natural Gas <input type="checkbox"/> Propane		
Maximum Fuel Usage Rate:	N/A <input type="checkbox"/> gal./hr. <input type="checkbox"/> cfh		
Maximum Daily Hrs. of Operations:	N/A (hours/day)		
Maximum Annual Hrs. of Operations:	N/A (hours/year)		
Stack Parameters:	Stack Height from Ground (ft): <u>N/A</u> Stack Exhaust Flow Rate (acfm): <u>N/A</u> Stack Inside Diameter (ft): <u>N/A</u> Stack Exhaust Gas Temperature (°F): <u>N/A</u>		

Manufacturer:	N/A	Model:	N/A
Maximum Rated Capacity:	N/A <input type="checkbox"/> Hp <input type="checkbox"/> kW		
Fuel Type:	<input type="checkbox"/> Gasoline <input type="checkbox"/> Diesel <input type="checkbox"/> Natural Gas <input type="checkbox"/> Propane		
Maximum Fuel Usage Rate:	N/A <input type="checkbox"/> gal./hr. <input type="checkbox"/> cfh		
Maximum Daily Hrs. of Operations:	N/A (hours/day)		
Maximum Annual Hrs. of Operations:	N/A (hours/year)		
Stack Parameters:	Stack Height from Ground (ft): <u>N/A</u> Stack Exhaust Flow Rate (acfm): <u>N/A</u> Stack Inside Diameter (ft): <u>N/A</u> Stack Exhaust Gas Temperature (°F): <u>N/A</u>		

☒ \$1,000 PTC application fee enclosed

### **Certification of Truth, Accuracy, and Completeness (by Responsible Official)**

I hereby certify that based on information and belief formed after reasonable inquiry, the statements and information contained in this and any attached and/or referenced document(s) are true, accurate, and complete in accordance with IDAPA 58.01.01.123-124.

Clarence H Davis  
Responsible Official Signature

Permits & Environmental Administrator  
Responsible Official Title

02/05/07  
Date

Clarence H Davis  
Print or Type Responsible Official Name

**H-K Contractors, Inc.  
Idaho Falls Facility HMA Plant  
Potential to Emit and Air Quality Modeling  
Analysis Report**

**Prepared for:**

**H-K Contractors, Inc.  
P.O. Box 51450  
Idaho Falls, ID 83405**

**Prepared by:**



**Environmental Consulting Services, LLP  
451 Freedom Ave.  
Billings, MT 59105  
[www.enviroconsult.com](http://www.enviroconsult.com)**

**April 5, 2007**

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## 1.0 INTRODUCTION

Environmental Consulting Services, LLP (ECS) has been retained by H-K Contractors, Inc. (HKC) to provide assistance with, and to perform, specific air quality (AQ) calculations and modeling services in order to support HKC with modifications to their AQ Permit to include the use of two additional fuel types in the Dryer Drum of the Idaho Falls Facility Hot Mix Asphalt (HMA) Plant. ECS has performed, and presents herein, potential to emit (PTE) calculations and AQ Modeling of the proposed changes to the Idaho Falls Facility HMA Plant.

## 2.0 SITE INFORMATION

ECS has been provided with the address of the Idaho Falls Facility HMA Plant site by HKC, with the current location of the site as 1523 East 49<sup>th</sup> North, Idaho Falls, ID (see Figure 1). This HMA Plant was issued a Permit to Construct (PTC) from the Idaho Department of Environmental Quality (IDEQ) on June 28, 1999 (AQ Permit #019-00031) and lists the following AQ Permit Emission Limits:

### Dryer Drum:

- PM (Particulate Matter) emissions from the dryer stack shall not exceed 0.04 gr/dscf (grains per dry standard cubic foot) in accordance with 40 CFR 60.92
- 99.0 tons per year (T/yr) Carbon Monoxide (CO) emission limit on dryer stack outlet
- 3,504,000 T/yr throughput limit for non-collocated facility
- 1,752,000 T/yr throughput limit for collocated facility
- 9,450 T/yr throughout limit for petroleum contaminated soil and aggregate mixture

This HMA Plant is a 1968 Barber Green, Drum Mix with a Wet Scrubber. The throughput rate of this HMA Plant is at the maximum of 400 T/hr (tons per hour), and currently uses propane and/or natural gas for fuel for the Dryer Drum.

## 3.0 PROPOSED CHANGES

It is the understanding of ECS that HKC wishes to propose that an additional two fuel types be able to be used and permitted for the Dryer Drum of The Idaho Falls Facility HMA Plant along with a change of burner and that these will be the sole proposed changes. The two additional fuel types proposed are: #2 Fuel Oil and Used Oil. ECS has therefore approached the PTE and AQ Modeling work tasks with these sole proposed changes in mind. As there will be no changes to the Tank Heater or other ancillary systems of the Idaho Falls Facility HMA Plant, then ECS sees no need to further quantify PTE or AQ Modeling for these features of this HMA Plant. PTE and AQ Modeling of the Idaho Falls Facility HMA Plant will be performed on the Dryer Drum only, and will consist of an assessment of any increase(s) of emissions of this HMA Plant due to the proposed additional fuel types to be used in the Dryer Drum.

Figure 1 – Site Location

Page 1



#### 4.0 PTE CALCULATIONS

ECS has used the following Idaho Falls Facility HMA Plant Dryer Drum specific data for PTE calculations as well as AQ Modeling work tasks:

- ◆ Barber Green Drum Mix Dryer Drum
- ◆ 400 T/hr throughput maximum capacity
- ◆ Four fuel types (proposed) of Propane; Natural Gas; #2 Fuel Oil; and Used Oil
- ◆ Wet Scrubber emission control (rated at a minimum of 70% control efficiency)
- ◆ Stack Height of 28 ft (feet) or 8.53 m (meters)
- ◆ Stack Diameter of 8 ft or 2.44 m
- ◆ Exit gas volume of 45,000 acfm (actual cubic feet per minute) or 14.92 ft/s (feet per second) or 4.55 m/s (meters per second)
- ◆ Exit gas temperature of 135 °F or 57.22 °C or 330.37 °K

For PTE calculations ECS will use AP-42 emission factors (Efs) and since there are four types of fuel proposed to be used for the Dryer Drum, then ECS will use the most restrictive (i.e., worst-case scenario) Ef for any/all listed parameters in AP-42 Section 11.1 Hot Mix Asphalt Plants, revised March 2004. For clarity ECS has calculated PTE for both criteria pollutants and toxic air pollutants (TAPs).

##### Criteria Pollutants PTE:

Criteria pollutants were calculated in three distinct manners, with copies of the spreadsheets included in Appendix A, as well as a comparison of data values spreadsheet. The four criteria pollutant PTE spreadsheets are:

- ◆ Maximum PTE
- ◆ Actual Proposed PTE
- ◆ Permit Limits PTE
- ◆ PTE Data Values Difference of Actual Proposed Compared to Current Permit Limits

The Maximum PTE calculations are for IDEQ to use to classify the Idaho Falls Facility HMA Plant, which according to IDEQ regulations appears to be classified as a “synthetic minor” (SM) source. The Actual Proposed PTE calculations present results for emissions of criteria pollutants according to the proposed changes of adding two fuel types for the Dryer Drum. The Permit Limits PTE calculations present results for emissions of criteria pollutants according to current permit limits for the Dryer Drum. The difference of the calculated emissions of the Actual Proposed PTE and the Permit Limits PTE is shown on the PTE Data Values Difference. The PTE Data Values Difference indicates one (1) criteria pollutant that will increase, with SO<sub>2</sub> emissions increasing a calculated 9.3 TPY.

As the calculated emission increase is well below the 40 TPY “significant” emission levels in IDAPA 58.01.01 then there does not appear to be any reason for any further study of the SO<sub>2</sub> criteria pollutant.

#### Toxic Air Pollutants PTE:

Toxic Air Pollutants (TAPs) were calculated in three distinct manners, with copies of the spreadsheets included in Appendix A, as well as a comparison of data values spreadsheet. The TAPs PTE spreadsheets are:

- ◆ Maximum PTE
- ◆ Actual Proposed PTE
- ◆ Permit Limits PTE
- ◆ PTE Data Values Difference of Actual Proposed Compared to Current Permit Limits

Again, the Maximum PTE calculations are for IDEQ to use to classify the Idaho Falls Facility HMA Plant. The Actual Proposed PTE calculations present results for emissions of TAPs according to the proposed changes of adding two fuel types for the Dryer Drum. The Permit Limits PTE calculations present results for emissions of TAPs according to current permit limits for the Dryer Drum. The difference of the calculated emissions of the Actual Proposed PTE and the Permit Limits PTE is shown on the PTE Data Values Difference. The PTE Data Values Difference indicates that there will be no TAPs increases in emissions that will exceed the screening emission level (EL) set by IDEQ in IDAPA 58.01.01 Sections 585 and 586. Due to this result then no further actions, including AQ Modeling, should be required.

## **5.0 AQ MODELING**

As no “significant” emission levels for criteria pollutants were reached or exceeded, as well as no ELs of TAPs reached or exceeded, then there does not appear to be any reason or requirement to perform AQ Modeling for the proposed changes of adding the two types of fuel for the Dryer Drum at this facility. Should AQ Modeling be deemed to be necessary/required for any air quality pollutant of the Idaho Falls Facility HMA Plant Dryer Drum, due to the proposed fuel type changes, then ECS would use the EPA approved SCREEN3 model with the specific stack data for the Idaho Falls Facility HMA Plant Dryer Drum, as shown above, and would typically use the rate of one (1) pound per hour (lb/hr) emission rate, which is 0.126 g/s (grams per second), to generate a dispersion coefficient for the Dryer Drum stack. ECS did perform this function (i.e., AQ Modeling) and this dispersion coefficient, which is shown to be 16.62 µg/m<sup>3</sup> (micrograms per cubic meter) per 1 lb/hr of any pollutant emitted from the Dryer Drum stack, can then be used as needed/required to calculate the highest estimated concentration of any pollutant for the Idaho Falls Facility HMA Plant Dryer Drum and the proposed changes of adding the two fuel types to the Dryer Drum.

Since there is a linear relationship between emission rate(s) and ambient air quality impact(s), then this relationship can be used to predict the actual ambient air quality impact by multiplying the dispersion coefficient of the Dryer Drum stack (i.e.,  $16.62 \mu\text{g}/\text{m}^3$ ) by the actual emission rates of any air quality pollutants emitted from the Idaho Falls Facility HMA Plant Dryer Drum.

## 6.0 DISCUSSION OF RESULTS

According to the PTE calculations and the AQ Modeling performed on the Idaho Falls Facility HMA Plant, as described within this Report, ECS has concluded that all Criteria Pollutants and the listed TAPs do not exceed any IDEQ ELs and/or trigger any additional modeling and/or assessments.

## 7.0 LIMITATIONS AND RESTRICTIONS

ECS has prepared this PTE and AQ Modeling Analysis Report specifically for this project, this site, and for HKC and the IDEQ. This document is solely for the use of ECS, HKC, and IDEQ any reliance on this document by a third party without the written consent of both ECS and HKC is prohibited. Should any information contained in this document, or any part of this document, be used by a third party, this shall be at the third party's sole risk.

## ENVIRONMENTAL CONSULTING SERVICES, LLP



Kevin K. Walsh  
Partner/Consultant

## **APPENDIX A**

### **POTENTIAL TO EMIT CALCULATIONS**

## H-K CONTRACTORS, INC.

## IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT

## EMISSION CALCULATIONS - MAXIMUM - POTENTIAL TO EMIT (based on 8,760 hours per year)

## UNCONTROLLED EMISSIONS

Based on maximum production rate of 400 tons per hour and four fuel types (Used Oil, #2 Fuel Oil, Propane, &amp; Natural Gas)

Point Source	PM EF Value (lb/ton)	PM EF Value (TPY)	PM-10 EF Value (lb/ton)	PM-10 EF Value (TPY)	CO EF Value (lb/ton)	CO EF Value (TPY)	NOx EF Value (lb/ton)	NOx EF Value (TPY)	SO2 EF Value (lb/ton)	SO2 EF Value (TPY)	VOC EF Value (lb/ton)	VOC EF Value (TPY)	Lead EF Value (lb/ton)	Lead EF Value (TPY)
HMA Plant	28.0	49056.0	6.5	11388.0	0.13	227.8	0.055	96.4	0.053	101.6	0.032	56.1	0.00054	0.9

Area Sources	PM EF Value (lb/ton)	PM EF Value (TPY)	PM-10 EF Value (lb/ton)	PM-10 EF Value (TPY)	CO EF Value (lb/ton)	CO EF Value (TPY)	NOx EF Value (lb/ton)	NOx EF Value (TPY)	SO2 EF Value (lb/ton)	SO2 EF Value (TPY)	VOC EF Value (lb/ton)	VOC EF Value (TPY)	Lead EF Value (lb/ton)	Lead EF Value (TPY)
Silo Filling	0.0021	3.7	0.0010	1.8	0.0081	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loadout	0.0025	4.4	0.0013	2.2	0.0092	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: EF values are from AP-42 and are as "uncontrolled" emissions

Total Particulate Matter (PM) and Total PM-10 EFs from Table 11.1-3

CO, NOx, SO2 EFs from Table 11.1-7

VOC EF from Table 11.1-8

Area Sources EFs from Table 11.1-14 (PM-10 estimated at 50% of PM)

## H-K CONTRACTORS, INC.

## IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT

## EMISSION CALCULATIONS - ACTUAL PROPOSED - POTENTIAL TO EMIT (based on 4,380 hours per year)

## CONTROLLED EMISSIONS (Wet Scrubber)

Based on maximum production rate of 400 tons per hour and four fuel types (Used Oil; #2 Fuel Oil; Propane; &amp; Natural Gas)

Point Source	PM EF Value (lb/ton)	PM (TPY)	PM-10 EF Value (lb/ton)	PM-10 (TPY)	CO EF Value (lb/ton)	CO (TPY)	NOx EF Value (lb/ton)	NOx (TPY)	SO2 EF Value (lb/ton)	SO2 (TPY)	VOC EF Value (lb/ton)	VOC (TPY)	Lead EF Value (lb/ton)	Lead (TPY)
HMA Plant	0.045	19.4	0.0042	3.7	0.13	54.2	0.055	14.5	0.058	15.2	0.012	8.4	0.00054	0.1

Area Sources	PM EF Value (lb/ton)	PM (TPY)	PM-10 EF Value (lb/ton)	PM-10 (TPY)	CO EF Value (lb/ton)	CO (TPY)	NOx EF Value (lb/ton)	NOx (TPY)	SO2 EF Value (lb/ton)	SO2 (TPY)	VOC EF Value (lb/ton)	VOC (TPY)	Lead EF Value (lb/ton)	Lead (TPY)
Silo Filling	0.0029	1.3	0.0014	0.6	0.0081	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loadout	0.0054	3.7	0.004	1.8	0.0092	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: EF values are from AP-42 and are as "controlled" emissions

Total Particulate Matter (PM) and Total PM-10 EFs from Tables 11.1-3 and 11.1-4 (fabric filter control)

CO, NOx, SO2 EFs from Table 11.1-7 and using a 70% control efficiency (CE) for the Wet Scrubber

VOC EF from Table 11.1-8 and using a 70% CE for the Wet Scrubber

Area Sources EFs from Table 11.1-14 using a 50% CE for water sprays

## H-K CONTRACTORS, INC.

## IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT

## EMISSION CALCULATIONS - PERMIT LIMITS - POTENTIAL TO EMIT (based on 8,760 hours per year when not collocated)

## CONTROLLED EMISSIONS (Wet Scrubber)

Based on maximum production rate of 400 tons per hour and currently permitted fuel type of Propane or Natural Gas

Point Source	PM EF Value (lb/ton)	PM (TPY)	PM-10 EF Value (lb/ton)	PM-10 (TPY)	CO EF Value (lb/ton)	CO (TPY)	NOx EF Value (lb/ton)	NOx (TPY)	SO2 EF Value (lb/ton)	SO2 (TPY)	VOC EF Value (lb/ton)	VOC (TPY)	Lead EF Value (lb/ton)	Lead (TPY)
HMA Plant	0.015	78.8	0.0042	7.4	0.13	227.8	0.026	45.6	0.0014	6.0	0.032	56.1	0.00054	0.9

Area Sources	PM EF Value (lb/ton)	PM (TPY)	PM-10 EF Value (lb/ton)	PM-10 (TPY)	CO EF Value (lb/ton)	CO (TPY)	NOx EF Value (lb/ton)	NOx (TPY)	SO2 EF Value (lb/ton)	SO2 (TPY)	VOC EF Value (lb/ton)	VOC (TPY)	Lead EF Value (lb/ton)	Lead (TPY)
Silo Filling (loadout)	0.0029	5.1	0.0014	2.4	0.0081	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Loadout	0.0054	14.7	0.004	7.0	0.0092	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: EF values are from AP-42 and are as "controlled" emissions

Total Particulate Matter (PM) and Total PM-10 EFs from Tables 11.1-3 and 11.1-4 (fabric filter control)

CO, NOx, SO2 EFs from Table 11.1-7 and using a 50% control efficiency (CE) for the Wet Scrubber

VOC EF from Table 11.1-8 and using a 50% CE for the Wet Scrubber

Area Sources EFs from Table 11.1-14 using a 50% CE for water sprays

H-K CONTRACTORS, INC.  
IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT  
PTE DATA VALUES DIFFERENCE OF ACTUAL PROPOSED COMPARED TO CURRENT PERMIT LIMITS  
For use in Emission Limit (EL) comparison for IDEQ and EPA Criteria Pollutants

Point Source	PM (TPY)	PM-10 (TPY)	CO (TPY)	NOx (TPY)	SO2 (TPY)	VOC (TPY)	Lead (TPY)
HMA Plant	-39.4	-3.7	-193.6	-31.1	9.3	-47.7	-0.8

Area Sources	PM (TPY)	PM-10 (TPY)	CO (TPY)	NOx (TPY)	SO2 (TPY)	VOC (TPY)	Lead (TPY)
Sub-filling	-1.8	-1.8	-10.6	0.0	0.0	0.0	0.0
Loadout	-11.0	-5.3	-12.1	0.0	0.0	0.0	0.0

H-K CONTRACTORS, INC.  
IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT

EMISSION CALCULATIONS - MAXIMUM - POTENTIAL TO EMIT (based on 8,760 hours per year)

Based on maximum production rate of 400 tons per hour and four fuel types (Used Oil; #2 Fuel Oil; Propane; & Natural Gas)

AIR TOXICS AND HAZARDOUS AIR POLLUTANTS (HAPs)

Point Source = HMA Plant; Parallel Drum Mix Dryer

[illegible]

NDFF: FP values are from AP-42 and are as a combination of "controlled" emissions as "false filter" and "uncontrolled"

Due to five types of fuel the "wax" wax was scissored and used

Table 11.1, 11.1a, 11.1b, & 11.1c

H-K CONTRACTORS, INC.  
 IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT  
 EMISSION CALCULATIONS - ACTUAL PROPOSED - POTENTIAL TO EMIT (based on 4,380 hours per year)  
 Based on maximum production rate of 400 tons per hour and four fuel types (based On: #2 Fuel Oil, Propane & Natural Gas)  
 AIR TOXICS AND HAZARDOUS AIR POLLUTANTS (HAPs)  
 Point Source = HMA Plant, Parallel Drum Mix Dryer

Pollutant	EF Value (lb/ton)	Calculated TPY	Pollutant	EF Value (lb/ton)	Calculated TPY
HCl	0.00021	0.13399	Mercury	0.00000018	0.00015768
Non-PH HAPs			Antimony	0.00000036	0.00003056
Acetaldehyde	0.0013	1.1333	Barium	0.00000055	0.00000005
Acrolein	0.000076	0.025776	Cadmium	0.00000041	0.00000004
Benzene	0.00019	0.14164	Chromium	0.00000055	0.00000005
Polychlorinated Benzenes	0.00024	0.21024	Cobalt	0.000000026	0.00000002776
Formaldehyde	0.0031	2.7156	Copper	0.00000031	0.00000031
Hexane	0.00092	0.80592	Hexavalent Chromium	0.00000045	0.00000045
Isodurene 2,2,4-trimethylpentane	0.00004	0.03804	Lead	0.00000062	0.00000062
Methyl Ethyl Ketone	0.00007	0.01752	Manganese	0.00000077	0.00000077
Propionaldehyde	0.00013	0.11358	Mercury	0.00000024	0.00000024
Quinoline	0.00016	0.14016	Nickel	0.0000003	0.0000003
Methyl chloroform	0.00048	0.047048	Phosphorus	0.00000028	0.00000028
Toluene	0.0019	1.5404	Silver	0.00000048	0.00000048
Xylene	0.0002	0.1752	Selenium	0.00000035	0.00000035
Total Non-PH HAPs	0.0095	8.322	Thallium	4.1E-09	3.591E-06
			Zinc	0.0000001	0.0000001
PH HAPs			Benzene		
2-Methylanthracene	0.00017	0.14892	2,3,7,8-TCDD	2.1E-13	1.839E-10
Acenaphthene	0.0000014	0.0001264	Total TCDD	9.3E-13	8.1468E-10
Acenaphthylene	0.000023	0.019272	1,2,3,7,8-PeCDD	3.1E-13	2.7156E-10
Anthracene	0.0000051	0.00027156	Total PeCDD	2.2E-11	1.9272E-08
Benzo(a)anthracene	0.0000021	0.0001836	1,2,3,4,7,8-HxCDD	4.2E-13	3.6792E-10
Benzo(a)pyrene	9.5E-09	8.5848E-06	1,2,3,6,7,8-HxCDD	1.3E-12	1.1388E-09
Benzo(b)fluoranthene	0.0000001	0.00000076	1,2,3,7,8,9-HxCDD	9.3E-13	8.1468E-10
Benzo(k)fluoranthene	0.0000001	0.00000006	Total HxCDD	1.22E-11	1.0512E-08
Benzo(k)fluoranthene	0.000000041	0.000000041	1,2,3,4,6,7,8-HpCDD	3.4E-11	2.9348E-08
Chrysene	0.00000018	0.00015768	Total HpCDD	7.10E-11	6.2196E-08
Fluoranthene	0.00000004	0.00000036	Octa CDD	2.70E-09	2.3652E-06
Fluorene	0.000011	0.000936	Total PCDD	2.80E-09	2.4528E-06
Indeno(1,2,3-cd)pyrene	0.000000007	0.000000007			
Naphthalene	0.00005	0.00043			
Perylene	1.1E-09	9.768E-06			
Phenanthrene	0.000023	0.000198			
Pyrene	0.000003	0.0000258			
Total PH HAPs	0.00083	0.77058			
Total HAPs	0.01	8.76			

NOTE: EF values are from AP-42 and are a combination of "controlled" emissions as "fabric filter" and "uncontrolled"  
 Due to four types of fuel the "worst-case" EF was selected and used  
 Tables 11.1-3, 11.1-10, & 11.1-12

[illegible]

NOTE. NLI = No Data and NVALU = no calculation.

NOTE: Nil = No Data and #VALUE! = no calculation.

H-K CONTRACTORS, INC.  
 IDAHO FALLS FACILITY HOT MIX ASPHALT (HMA) PLANT  
 PTE DATA VALUES DIFFERENCE OF ACTUAL PROPOSED COMPARED TO CURRENT PERMIT LIMITS  
 For use in Emission Limit (EL) comparison for IDEQ listed Toxic Air Pollutants (TAPs)  
 AIR TOXICS AND HAZARDOUS AIR POLLUTANTS (HAPs)  
 Point Source = HMA Plant, Parallel Drum Mix Dryer

Pollutant	IDEQ EL (lb/hr)	Difference lb/hr	Exceed EL (Y/N)	Pollutant	IDEQ EL (lb/hr)	Difference lb/hr	Exceed EL (Y/N)
PCB		#VAL133		Mercury	0.001	-0.0002	
Non-PAH HAPs				Methyl	1.51e-05	-0.0001	
Acetaldehyde	3.00e-03	#VAL134		Mercury	0.001	-0.0001	
Acetone	1.71e-02	#VAL135		Mercury	0.001	-0.0001	
Benzene	9.00e-04	-0.0001		Mercury	0.001	-0.0001	
Ethylbenzene	2.00e-04	-0.0001		Mercury	0.001	-0.0001	
Formaldehyde	5.11e-04	-0.0001		Mercury	0.001	-0.0001	
Gasoline	12.00	-0.0001		Mercury	0.001	-0.0001	
Gasoline (2,2,4-trimethylpentane)		-0.0001		Mercury	0.001	-0.0001	
Methyl Ethyl Ketone	1.00e-03	#VAL136		Mercury	0.001	-0.0001	
Propionaldehyde	2.87e-02	#VAL137		Mercury	0.001	-0.0001	
Quinone	2.78e-02	#VAL138		Mercury	0.001	-0.0001	
Methyl Ethyl Ketone	1.25e-03	-0.0001		Mercury	0.001	-0.0001	
Gasoline	2.00	-0.0001		Mercury	0.001	-0.0001	
Acetone	2.00	-0.0001		Mercury	0.001	-0.0001	
Total Non-PAH HAPs		-0.0001		Mercury	0.001	-0.0001	
				Mercury	0.001	-0.0001	
PAH HAPs				Mercury	0.001	-0.0001	
Acetaldehyde	0.0001	-0.0001		Mercury	0.001	-0.0001	
Acetone	0.0001	-0.0001		Mercury	0.001	-0.0001	
Benzene	0.0001	-0.0001		Mercury	0.001	-0.0001	
Ethylbenzene	0.0001	-0.0001		Mercury	0.001	-0.0001	
Formaldehyde	0.0001	-0.0001		Mercury	0.001	-0.0001	
Gasoline	0.0001	-0.0001		Mercury	0.001	-0.0001	
Gasoline (2,2,4-trimethylpentane)	0.0001	-0.0001		Mercury	0.001	-0.0001	
Methyl Ethyl Ketone	0.0001	-0.0001		Mercury	0.001	-0.0001	
Propionaldehyde	0.0001	-0.0001		Mercury	0.001	-0.0001	
Quinone	0.0001	-0.0001		Mercury	0.001	-0.0001	
Methyl Ethyl Ketone	0.0001	-0.0001		Mercury	0.001	-0.0001	
Gasoline	0.0001	-0.0001		Mercury	0.001	-0.0001	
Acetone	0.0001	-0.0001		Mercury	0.001	-0.0001	
Total PAH HAPs		-0.0001		Mercury	0.001	-0.0001	
Total HAPs		-0.0001		Mercury	0.001	-0.0001	

NOTE: IDEQ EL values taken from IDAPA 54.01.01 Tables in Sections 545 and 546 and represent the "Permitting Emission Level"  
 NOTE: #VAL133 indicates an calculation and therefore no difference

## **APPENDIX B**

### **AQ MODELING (SCREEN3) PARAMETERS AND RESULTS**

Date: 3/22/2007

## SCREEN3 Modeling Raw Data Inputs

Client: H-K Contractors, Inc.  
Source: Idaho Falls Facility HMA Plant (1968 Barber Green; Drum Mix)  
Type: Dryer Drum  
Compound (Air Pollutant): All, set at 1.0 pound per hour (lb/hr)

1. Measured **or** estimated emission rate in either pounds per hour (lbs/hr) or grams per second (g/s):  
1.0 lb/hr or 0.126 g/s
2. Measurements of the exit stack height for the Source, above the ground level in either feet (ft) or meters (m):  
28 ft or 8.53 m
3. Measurements of the inside diameter of the stack for the Source in either ft or m:  
8.0 ft or 2.44 m
4. Measured **or** estimated rate of stack exit velocity in either feet per second (ft/s) or meters per second (m/s) of the stack for the Source:  
14.92 ft/s or 4.55 m/s
5. Measured **or** estimated stack gas temperature in either °F or °C of the stack for the Source:  
135 °F or 57.22°F or 330.37°K
6. Notification of any terrain in the area that is above the exit of the stack for the Source:  
None
7. Notification of the facilities setting as either Urban or Rural of the stack for the Source:  
Rural
8. Measurements of the buildings height in either ft or m, **if** there are any buildings associated with the stack for the Source:  
N/A
9. Measurements of the buildings minimum and maximum dimensions in either ft or m:  
N/A
10. Location of the facility, and/or nearest city:  
1523 East 49<sup>th</sup> North, Idaho Falls, ID
11. Measurements of distance from the stack for the Source to the property boundary in ft or m:  
Unknown

03/30/07  
14:30:08

\*\*\* SCREEN3 MODEL RUN \*\*\*  
\*\*\* VERSION DATED 96043 \*\*\*

# H-K Contractors Idaho Falls Facility HMA Plant Dryer Drum Dispersion Factor

## SIMPLE TERRAIN INPUTS:

```

SOURCE TYPE           =          POINT
EMISSION RATE (G/S)   =          .126000
STACK HEIGHT (M)      =          8.5300
STK INSIDE DIAM (M)   =          2.4400
STK EXIT VELOCITY (M/S) =          4.5500
STK GAS EXIT TEMP (K) =          330.7300
AMBIENT AIR TEMP (K)  =          293.0000
RECEPTOR HEIGHT (M) =          1.0000
URBAN/RURAL OPTION    =          RURAL
BUILDING HEIGHT (M)   =          .0000
MIN HORIZ BLDG DIM (M) =          .0000
MAX HORIZ BLDG DIM (M) =          .0000

```

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.  
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 7.576 M\*\*4/S\*\*3; MOM. FLUX = 27.298 M\*\*4/S\*\*2.

## \*\*\* FULL METEOROLOGY \*\*\*

\*\*\*\*\*  
\*\*\* SCREEN AUTOMATED DISTANCES \*\*\*  
\*\*\*\*\*

\*\*\* TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES \*\*\*

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
50.	5.903	4	20.0	20.0	6400.0	7.21	4.35	2.62	NO
100.	16.61	4	20.0	20.0	6400.0	7.21	8.26	4.75	NO
200.	11.20	4	15.0	15.0	4800.0	9.21	15.67	8.70	NO
300.	8.051	4	10.0	10.0	3200.0	13.21	22.78	12.41	NO
400.	6.316	4	8.0	8.0	2560.0	16.22	29.66	15.66	NO
500.	5.072	4	8.0	8.0	2560.0	16.22	36.31	18.63	NO
600.	4.385	4	5.0	5.0	1600.0	25.22	43.08	21.94	NO
700.	3.895	4	5.0	5.0	1600.0	25.22	49.50	24.68	NO
800.	3.466	4	4.5	4.5	1440.0	27.89	55.92	27.49	NO
900.	3.125	4	4.0	4.0	1280.0	31.22	62.28	30.28	NO
1000.	2.839	4	3.5	3.5	1120.0	35.51	68.59	33.07	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 50. M:

102.	16.62	4	20.0	20.0	6400.0	7.21	8.49	4.87	NO
------	-------	---	------	------	--------	------	------	------	----

DWASH= MEANS NO CALC MADE (CONC = 0.0)  
 DWASH=NO MEANS NO BUILDING DOWNWASH USED  
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED  
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED  
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3\*LB

\*\*\*\*\*  
\*\*\* SUMMARY OF SCREEN MODEL RESULTS \*\*\*  
\*\*\*\*\*

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
-----	-----	-----	-----
SIMPLE TERRAIN	16.62	102.	0.

\*\*\*\*\*  
\*\* REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS \*\*  
\*\*\*\*\*